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ABSTRACT

Developmental influences on temporal perspective is investigated. Objectives of the study were to clarify whether temporal perspective develops in a continuous or discontinuous fashion and to determine sex differences in relation to temporal perspective during adolescence. The study included 20 boys and 20 girls in each of four age groups: 9 & 10; 12 & 13; 15 & 16; and 18 & 19. Subjects took the Time Reference Inventory in their usual classroom setting. This measures the mean number of years Ss project thoughts into the future and into the past, and a single orientation measure. Results indicate that sex differences should be replicated before considered significant. Age differences, however, were more reliable. Younger adolescents projected their thoughts more into the future than older adolescents, presenting a J shaped curve with increasing age. The same condition occurred for the single orientation measure. Conclusions are that future extension is a more reliable variable than past extension; sex differences are minimal; and anxiety is probably an important factor in orientation. (Not available in hard copy due to marginal legibility of original document.) (DJ)

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Developmental Aspects of Temporal Orientation in Adolescents

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Little investigation has been conducted of temporal orientation in adolescents. Some investigators (e.g., Bromberg, 1938; Oakden & Strut, 1922) posited that before the age of 11, a child was incapable of a historical sense of time, but arrived at the adult level of understanding at age 13. Ames (1946) found that a child could not understand the concept of a month until age seven. Prior to that age, the child lives predominantly in the present, with some focus on the future, but little on the past. Roos and Albers (1965a) found similarly that teenage retardates had little future orientation as compared with non-retardate teenagers.

Research was needed concerning developmental influences on temporal perspective in order to clarify whether temporal perspective develops in a continuous, or discontinuous fashion. Likewise, investigation was needed to determine whether sex differences existed at various age levels of adolescence, since Pishkin, Wolfgang, and Rasmussen (1968) found females, ages 10 to 18, to have greater concept mastery in general than males.

Procedure

Four age groups were utilized, covering the span from preadolescence to young adulthood: (a) ages 9 and 10 (fifth graders), (b) ages 12 and 13 (eighthgraders), (c) ages 15 and 16 (11th graders), and (d) ages 18 and 19 (college freshman). Each age group contained approximately 20 males and 20 females, and all Subjects (Ss) had

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measured I.Q. scores (on the Slossen Intelligence Test) greater than 90 to insure adequate comprehension of the measures to be used.

To measure temporal orientation, the Time Reference Inventory (Foulks & Webb, 1967; Roos & Albers, 1965b) was administered to each group in their usual classroom setting. This paper and pencil test consists of items describing ten pleasant, ten unpleasant, and ten neutral events (e.g., "The happiest time of my life is in the ..."). Subjects decide whether each item refers, for them, to their "past," "present," or "future," and mark down the age they will be when that item is applicable. The Time Reference Inventory yields measures of Future Extension (mean number of years Ss project their toughts into the future), Past Extension (mean number of years Ss project their thoughts into the past), and Mean Age Focus minus Chronological Age (a single overall measure of orientation combining Future Extension and Past Extension). The Time Reference Inventory, using these measures, has yielded highly significant differences between adult diagnostic groups in previous research (Foulks & Webb, 1967; Roos & Albers, 1965a; 1965b).

Results

Sex differences. Within each of the four age groups, scores were compared for males and females on the three Time Reference Inventory measures. Significant differences were found only in one age group (12 to 13 year olds) for Future Extension ($H = 8.27$, $df = 1$, $p < .01$) and for the measure of Mean Age Focus minus Chronological Age ($H = 5.96$, $df = 1$, $p < .02$). In both instances, males

projected their thoughts farther into the future than did their female counterparts. Pending replication, however, the present sex difference findings probably should be considered Type I errors.

Age differences. Findings of developmental influences were more reliable. The four age groups differed significantly for both sexes for the variable of Future Extension, and for Mean Age Focus minus Chronological Age. No significant differences were found for Past Extension across the age groups. A summary of these results is presented in Table 1.

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Insert Table 1 about here

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Surprisingly, younger adolescents (i.e., ages 9 & 10, and 12 & 13) projected their thoughts farther into the future, whereas the older adolescents (ages 15 & 16, and 18 & 19) were much more concerned with the present. This relationship between age and Future Extension was not linear, however. The order of the groups was as follows. At age 15 to 16, both males and females were least future oriented. Age group 18 to 19 was next least future oriented. Age group 12 to 13 came next, while age group 9 to 10 were most future oriented. A similar increasing order of magnitude occurred for the overall variable of Mean Age Focus minus Chronological Age, apparently reflecting the findings with Future Extension. The curve of median scores across groups, thus, was J - shaped, rather than linear with increasing age. These results suggest that adolescents (particularly ages 15 to 16) are much more focussed upon present occurrences and feelings than are pre-adolescents.

Discussion

The present results replicate earlier findings of others (Eson, 1951; Woulks & Webb, 1967; Wohlford, 1968) that Future Extension is a particularly sensitive and reliable variable, and that persons and groups vary much more on this variable than on the variable of Past Extension. What is new in the present results is the demonstration that 9 and 10 year old children apparently have a reliable grasp on the concept of future extension. This finding supports the observation of Ames (1946), but contradicts the contention of Oakden and Strut (1922) and Friedman (1943-1944) that a child is incapable of such a historical sense of time until approximately age 12. At least a portion of the contradiction perhaps may be resolved due to the earlier maturation of children in the present generation, thirty years after the observations of these authors.

Sex differences in temporal orientation at different adolescent age levels were minimal in the present study, if in fact they reliably existed at all. This finding is similar to Wohlford's (1968) results with college students, but contrast sharply with the results of Tolas, Brannigan and Murphy (1970) where female college students showed significantly greater future extension.

The simple hypothesis (Eson, 1951) that projection of thoughts into the past and into the future increases with advancing age was not confirmed by the present results. No significant differences on Past Extension occurred, while for Future Extension, younger Ss, in general, focused farther into the future than did older Ss. The curve representing this relationship appears to be "J - shaped." At the age of 15 to 16, both males and females apparently

become less future oriented than they were in younger years, and than they will be at older age levels. At this age, there seems to be a particularly strong tendency to focus on immediate personal concerns of the present, probably in a social sense. One might speculate that the longer range concerns of the other age groups are perhaps more vocationally, than socially, oriented.

The possibility should also be considered that the temporal orientation patterns demonstrated in the present study would be relevant to the ability to delay immediate gratification in favor of long-range goals. Related to this consideration is the finding of Siegman (1961) and of Barndt and Johnson (1955) that delinquent adolescents have significantly shorter future time perspective than do non-delinquent children.

The J-shaped curve of Future Extension in the present results might be explained in terms of Ss' levels of anxiety at different age levels. Foulks and Webb (1967) posited that, with diagnostic groups, Future Extension (concern with the distant future) increased as one became comfortable in one's environment, or with one's state of being. This hypothesis was not a new one. Adler (1925), Allport (1950), May (1958) and Way (1950) all speculated that increased future extension was directly related to "mental healthiness." The present results would tend to support that notion, if one assumes early adolescence (age 15 to 16) to be a time of particular emotional turmoil and discomfort. These findings are consistent with those of Teahan (1958) that 12 year old children with greater Future Extension more often had optimistic outlooks and were high achievers. Children with low future extension were also less capable of structuring meaningful subgoals on a time continuum.

Other investigators have found similar relationships with anxiety. Krauss and Ruiz (1967) found that reduction of Future Extension is directly related to anxiety in hospitalized mental patients, and in a second study demonstrated similar findings in normal Ss when under environmental stress (Krauss, Ruiz, Mozdzierz & Button, 1967). Israeli (1935) likewise found that the future time perspective of unemployed persons was highly similar to the future extension of "mentally ill" patients.

Contrastingly, Farber (1951; 1953), though recognizing the relation between anxiety and reduced Future Extension, posited a somewhat reversed relation. He stated that one's current mood (e.g., anxiety) is more influenced by one's future time perspective than by one's situation. That is, one's future time perspective controls one's anxiety, rather than that one's anxiety influences one's future time perspective. Naturalistic observation would tend to indicate both phenomena to occur, anxiety influencing future extension, and future extension modifying anxiety. The results of the bulk of research to date, however, including the present study, would support the contention that anxiety is the more potent variable.

Finally, comparisons of scores of the present samples were made with the adult normal sample of Foulks and Webb (1967). All adolescent groups had significantly shorter Future Extension scores ($p < .01$) than the adult normal Ss. Thus, in the age span from age 9 to 42 (the mean age of the normal group in the Webb and Foulks sample), the curve of Future Extension becomes essentially "U - Shaped."

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Table 1

Temporal Orientation Differences of Age Groups

	H - value [1]	p
Past Extension x Age Groups		
Males	4.16	n.s.
Females	7.17	n.s.
Future Extension x Age Groups		
Males	15.67	$< .01$
Females	22.57	$< .001$
Mean Age Focus minus C.A. x Age Groups		
Males	23.08	$< .001$
Females	20.36	$< .001$

1. Kruskal - Wallis H - tests were used with df = 3 for values presented.